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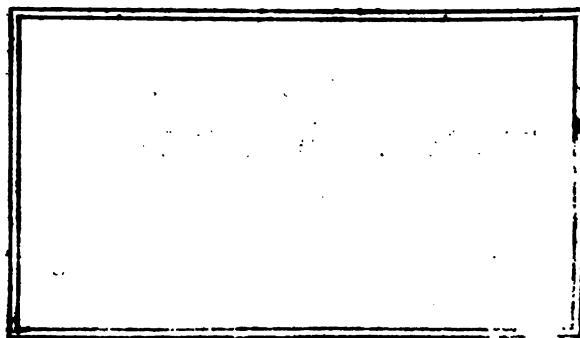
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Hall, C. W.
Minnesota, its resources and
possibilities.

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MINNESOTA,

Its Resources and Possibilities.

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VINTAGE: 1888
GENEALOGICAL

MINNESOTA:

Its Resources and Possibilities.

PHYSICAL: - - - - - PROFESSOR C. W. HALL.
COMMERCIAL: - - - - - MR. DAVID C. BELL.
RELIGIOUS: - - - - - REV. J. H. MORLEY.

READ BEFORE THE

Congregational Club of Minnesota,

—AND—

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At a meeting of the Congregational Club of Minnesota, held
27th, 1885, in the Pilgrim Church, in Minneapolis, the papers
before the public were read, and, by the unanimous vote of the
copies were requested for publication, in order that the valuable
compiled with such care might be more widely known.

H. C. HOVEY,
M. M. G. DANA,
H. H. HART,
Commit

The Physical Possibilities of Minnesota.

BY PROFESSOR C. W. HALE.

AS knowledge accumulates and opportunity for observation broadens, thoughtful minds are more and more inclined to look to the physical world for the causes of conditions among men. It is a fact, hard and rugged as it may appear to the sentimental mind, that man is a true child of nature. The warm days of a springtime are enervating. One feels a lethargy stealing over him as the high nerve tension of winter gives place to the greater indolence of the summer months. Resist it as he will, the body cannot respond to ambitious effort. The proverbial shiftlessness of the south and the shriveled and narrowed physiques and intellects of the high north are well attested facts.

The laws which direct the course of things extend to the human race and bind man down to the conditions which surround him, except so far as a touch of the divine gives him power to modify himself or to bring under his own control the surroundings under which he passes.

Touching this position one becomes convinced on reading the opening pages of Curtius' History of Greece. With a masterly hand the author traces the peculiar traits of the several tribes of the Grecian nation to the characteristics of soil, climate and surroundings of the several portions of that peninsula. How the warm, sunny valleys and rich bottom lands developed the disposition to submit to the will of heaven; and how the hills were covered with the spirit of brave independence are clearly pointed out. "Yet at how early a date," says the author, "would Greek history have come to an end had its only theater been

under the skies of Ionia! It was, after all, only in European Hellas that the fullness of energy of which the nation was capable came to light; on that soil so much more sparingly endowed by nature; here, after all, men's bodies received a more powerful, and their minds a freer, development; here the country which they made their own by drainage and embankment and artificial irrigation, became their native land in a fuller sense than the land on the opposite shore, where the gifts of God dropped into men's laps without any effort being necessary for their attainment."

On coming to a later day and a newer country we can see the finger of physical destiny pointing out to the great British kingdom the way to universal supremacy.

The uplifting of Britain since the land was first occupied by man and her separation from the rest of Europe by the inflowing of the sea has protected her people from encroachments; has allowed of an internal development possible to no other nation of this globe—not even to China.

The people were fitted by a vigorous and healthy intellectual growth to seize upon and utilize the wonderful material resources of the island, the stores of coal and iron, the fertility of the soil and unsurpassed shipping facilities. National traits, too, have been allowed to crystallize. The light-hearted, keen, ready, witty, impulsive Irishman, and the Scottish highlander, neither merry nor witty, but reserved, unexpansive and determinedly persevering, were originally the same being.

The fertile soil and soft climate which have made Ireland **the** "Emerald Isle," the freedom from foreign interference, and the certainty of a return for his labor have left but little to mar the gayety and the careless, childlike temperament of the Irishman. Narrow glens, high, rugged hills, a scant and stony soil, and a wet, cold uncertain climate environ the highlander. The

clouds around the hilltops shut out the sun from his fields, the seed often rots in the ground, and the grain will hardly ripen in his small and hardly wrought corn patch. He, too, like the granite hills that shut him in, has become hard and enduring.

If this seems a solitary illustration drawn from modern days, compare with it the same Celtic race as developed among the mountains of Switzerland and on the fertile plains of lowland France.

The state from which this Club receives its name occupies the very apex of the North American continent, with a mantle of soil 84,286 square miles in extent. Of this area 29,453 square miles are drained to the northward into Hudson's bay through the Red and Rainy Lake rivers; 7,689 square miles eastward into the gulf of St. Lawrence through the St. Louis and Pigeon rivers, and also the Brule, Temperance, the Baptism and the Devil's Track—long may they flow, and may the speckled trout ever sport in their waters!—the drainage of 1,929 square miles, a tract nearly as large as Delaware, in the southwestern corner of the state, is directed into the Missouri, while the waters from the remaining surface, 35,215 square miles, flow to the south and with those of the Missouri are lost in the gulf of Mexico.

And touching this position, too, the terms apex and center are practically synonyms, for it is only 200 miles further from St. Vincent to Astoria, Ore., than it is from Pigeon Point to Eastport, Me.; or standing beside the falls of St. Anthony, where the Father of Waters slides down over a plank of pine from his bed upon silurian corals, brachiopods, mammoth orthoceratites, and the progenitors of the oyster into the dark uncertainties of the cambrian age, one is only 400 miles nearer the isthmus of Panama than the Behring strait; he is as near the spot where Dr. Kane and his party went into winter quarters, almost upon the shore of the open polar sea, as he is to the route of the

proposed canal across Nicaragua; indeed, Fort York, the Hudson Bay port for the northwest territory, is nearer to him by many miles than either Montreal or Vicksburg.

What distances to contemplate! As we stand here and try to grasp the capabilities of this stretch of country beyond us we find that its half cannot now be told. Between the Mississippi river and the foot of the rugged Rocky mountains, from the south line of Dakota to the northern limit of the cereals there lies a territory upon which England, France and Germany can be extended and an empire still be left. Nearly all this area is fertile for grain or grass or fish. We are located upon its very border, whether we consider space or time.

So if it were the physical possibilities from a commercial standpoint, we should see that Minnesota is the gateway through which must pour in the future a large portion of the products of a continent. As at a break in an embankment, if the small stream be not promptly stopped, soon an irresistible current will follow. So here with the currents of trade and travel. The stream has already been directed through the state into the vast empire beyond us, and unless checked by the perversity of men, or turned by their unpardonable lack of business vigilance, it will take on volume as it rolls. The return will be greater than the flow, since it will have the added momentum of all the surplus the great northwest can produce.

Under ordinary circumstances one would suppose this central area from which the waters run would be to the surrounding states what a New England hillside is to the patches of bottom-land along her streams. Such might have been the case had not the gently sloping surface of our state been prepared for its present occupants by the plow. Not the plow of our fathers, that old farm implement which rises to our imagination with its wroughtiron point, its wooden mould board, its long beam, its

rough handles and its complete show of clumsy handiwork; for this plow was devised, served its generation, did well its rough work and passed into new and improved forms, long after that original plow closed up its work upon the arable portions of our continent. But I refer to that great glacial plow, guided by infinite hands, cutting deep through fields of ice and into the ancient rocks, carving furrow after furrow from the north towards the south. By it the wrinkled gneisses and schists were torn up and carried along, the upturned edges of the slates were cut away, the uppermost silurian was shaved off, while lava fields, hundreds of miles in extent, to the north of Lake Superior and in Canada were removed piece by piece. All their debris in fragments, coarse and fine, rounded and smoothed by constant rolling and pushing and perpetual contact, has been left in uneven ridges on almost every square mile of our state and of our neighboring states. It covers the bed-rock with a layer from a few inches to several hundred feet in thickness. It contains silica, alumina, lime, magnesia, potash and soda, phosphoric acid and water, in short, every chemical constituent necessary to make a varied soil. It has in places a sub-soil of clay—there grasses will never cease to grow—elsewhere a gravelly sub-soil will allow the many fruit and forest trees to brace themselves deep and strong against the winds.

So we see that Minnesota will yield wheat and oats, corn, rye, and grass, fruit and amber cane; and we see something more: these staple products will grow side by side and in abundant crop. A few figures will prove the statement:

According to the tenth census tables, the yield per acre in Minnesota was:

	BUSHELS.
For Wheat	$11\frac{1}{3}$
For Rye	16
For Oats	38
For Barley	$11\frac{1}{2}$
For Buckwheat.....	11
For Corn.....	34

The whole United States, Minnesota included, yielded per acre:

	BUSHELS.
Wheat	13
Rye.....	11
Oats	25
Barley	22
Buckwheat.....	14
Corn.....	28

Calculating for all the crops, the average per acre for the same tables we get for Minnesota, eighteen bushels, for the whole United States, 14.3 bushels.

In the above list the wheat crop is the one about which we are particularly sensitive. We know we produce the best wheat and want to produce the most of it. The crop for 1879, and from which the tables were calculated, was 34,600,000 raised on a little more than 3,000,000 acres; but since those days of the last decade we have increased both our total yield, and our yield per acre.

	ACRES.	YIELDED.	BUSHELS PER ACRE.
In 1882	2,547,000	33,030,500	13
In 1883	2,571,637	38,365,373	15
In 1884	2,780,539	47,792,662	17.18

And the least of these is equal to the total average of the United States in 1879.

Lest anyone should think that the wheat crop was exceptional, I have calculated the total of these several crops—wheat, rye, oats, barley, buckwheat and corn for Minnesota, and found them to be for 1880, 16.6 bushels per acre of all the crops named.

1881, 16.3 bushels per acre of all the crops named.

1882, 17.1 bushels per acre of all the crops named.

1883, 17.5 bushels per acre of all the crops named.

While 1884 has yielded the most bountiful harvest the state has known.

Turning to another product, it is sufficient perhaps to state that more grass will grow to the acre in Minnesota than in any other state in the union. In 1879, the latest report at hand, Minnesota yielded 1.55 tons per acre of hay, while the whole country yielded only 1.15 tons. Following Minnesota in the order named, Iowa, Illinois and Wisconsin produced 1.45, 1.33 and 1.28 tons; the remaining states so little as to bring down the average to the figures named, *i. e.* 1.15 tons.

This superior fertility for grass is the bow of promise for our state. With the filling up of our many sloughs and shallow lakes the acreage of choice grass lands is constantly increasing. Domestic animals of all kinds are of superior health and vigor. The possibilities of the future in all those products of the farm depending directly upon the amount of hay and grass annually grown are almost beyond estimate.

These are a few of the present facts, from an agriculturist's standpoint. We might philosophize long and profitably from them to the possibilities, did time permit. The history of agriculture has shown that everything depends upon a wise selection of varieties, whether in raising crops or rearing flocks. The soil of Minnesota will respond to almost any reasonable demand. But our farmers have learned that nature cannot be controlled; her laws are ever executed: wheat will not always mature, corn will not always ripen—they will not both thrive at their best under the same physical conditions. * * * The fortunate choice from an almost indefinite number often makes all the difference between profit and no profit, between success and failure.

One of the problems, yes, of the possibilities, of the future lies in that mental grasp which will select those crops, rear those varieties of animals destined to crown labor with profit, and experiment with the highest success.

These vast agricultural actualities and possibilities it is possible to move to the markets of the world with surprising facility. The millions who were so unfortunate as not to have been born in or migrated to Minnesota must be fed and kept warm.

The lowest part of our state, the shore of Lake Superior, is 602 feet above the sea; the highest, the Mesabi, the watershed between the head waters of the St. Lawrence system and those of the Hudson bay, less than 2,500 feet high. The great prairie region is singularly uniform in altitude, and the average height of the whole state is not far from 1,200 feet. Railroads can be built anywhere, long trains can be drawn and markets be reached with cheapness and quickness.

But the man who has no taste for farming must not think there is no place for him in this great garden of the northwest. Here is the center of the continent. Clustered around this geographical center, the falls of St. Anthony, are flouring and lumbering mills, the like of which the world has never seen. Here the new products of the farm and forest are prepared for use, and men must come to do this work. Over 135,000 horse-power can be utilized for every branch of manufacturing the needs of a half million square miles demand.

This is only a fraction of the sum total of the water power available along our many streams. The rapids of the St. Croix, the St. Louis, the Minnesota, the Red, and the many smaller streams of the state lie as yet almost wholly undeveloped, as possibilities, the magnitude of which will grow with each succeeding year.

The building stones of Minnesota deserve notice. Wherever the smoother hummocks appear, too hard for the glacial plow to overthrow or wear away, the best of material for pavements, business blocks, bridges, and every other heavy structure can be found. General Gilmore has determined the resistance to pres-

sure of our granites and syenites, to be something surprising; 25,000 to 28,000 pounds per square inch is the usual strength of those rocks now being quarried in the central part of the state. A power of 2,000 tons per square foot in a well built wall will enable an architect to cast fear to the winds. But the granites are only the foundation rocks. Lying upon these are roofing slates, as at Knife Falls and Thompson; then comes the sandstone and the quartzite of the southwestern portions of the state; next the Lake Superior brown stone—that of our Westminster church, a grand and eternal-looking structure—lies in immense beds around Fond-du-Lac; nor is the supply by any means small along the Kettle river valley; while into the perpendicular bluffs of the Minnesota and the Mississippi at Mankato, Kasota, Shakopee, Minneapolis, St. Paul, Stillwater, Nininger, Red Wing, Frontenac, Winona, Dresbach, and a score of other places, the quarryman has begun to hew and blast. From these quarries the stonemason dresses the best limestone, dolomite and sandstone of the upper Mississippi valley. When around and to the west of us twenty or more millions of people, with all the wealth and development of public and private enterprise which such a population implies, are bringing to a still higher perfection their physical and commercial possibilities, these beds of granites, sandstones and limestones, with deposits of brick clay in every county, yes, almost every township in the state, will only begin to show their capabilities.

According to the reports of explorers brought in from the woods, the northeastern portion of the state will never be well adapted to agriculture. But there is a grand compensation. It contains what are believed to be some of the richest deposits of iron ore thus far discovered on this continent. The ores are hematite and magnetite, varying in their yield of metallic iron from 50 to 70 per cent. The beds of ore are so situated that

the cost of loading the material on the cars is a mere trifle. And already, even before the mines are fairly opened, thousands of tons are transported to the smelting furnaces of Cleveland. When the time comes that smelting works and steel works and rolling mills are located at Duluth, Grand Marais, and other soon-to-be important lake ports, we shall see an industry wholly Minnesotan, of which every inhabitant of the state must be proud. We can scarcely compute the amount of iron which will be needed to meet the business wants of the 300,000 square miles of prairie grain fields and pastures soon to be occupied between the great lakes and the Rocky mountains. Minnesota can yield enough to supply every demand.

Gold and silver have long been known to exist in the northern part of the state. Many an explorer has taken his pack, his miner's pick and a box of matches and traversed that broken country in search of metals. The search is last at successful. The sanguine prophets of the past, who have been looked upon as dreamers or speculators, are now rather regarded as keen-sighted men, who did not tell the half they knew. Samples of gold and silver ore are being sent in from the tract lying to the north of Lake Superior, which disclose to the assayer a surprising richness.

The temperature of Minnesota is another subject of vital importance. Our 10,000 lakes form a vast reservoir of heat, of which a single computation may give a more definite conception. According to Rev. C. M. Terry, in his paper on the hydrology of Minnesota, the lakes will give an average, taken at their highest temperature, of about 75 degrees, or 43 degrees above freezing point. Ten feet may be taken as a fair average of depth for the 5,688 square miles of water surface these lakes contain, thus giving 10.68 cubic miles of water. Each cubic foot will contain about 1,250,000 foot pounds of heat, or heat

enough to raise 1,250,000 pounds one foot from the earth, thus giving to the whole bulk of water the enormous power of 2,962, 639,360,000,000,000 foot pounds. In other words, there is heat enough stored up in our Minnesota lakes each summer and given off during the cooling autumn, to raise a block of granite as large as a township and 100 feet thick, to a height of over 800 miles above the level of the sea.

One of the possibilities of Minnesota is that these thousands of lakes will be filled up by growing plants, and this heat will be stored in earth which will give it up rapidly, thus making our summers hotter than they are now, and affording no protection against our northern winds, which bear over the state the chilling winds and nipping frosts of autumn. This, however, is not a probability of the immediate future.

The rainfall of our state is a significant figure in the problem of climate. These figures are shown by observation: the annual rainfall at the Fort Snelling station for the eighteen years between 1837 and 1854 inclusive, was 25 30 inches. Mr. William Cheney tells us that for the last eighteen years, the average has been at Minneapolis 28.67 inches, which is just about the average of the whole United States, not including Alaska. Since we consider our country the nearest perfect of any on the globe, we can flatter ourselves that this state is not far from the golden mean, so far as rainfall is concerned, at least. As Mr. Cheney's figures indicate to us that it is raining more and more with each succeeding decade, another of the physical possibilities is that we shall be drenched by perpetual rains and a second flood.

The effect of this rather dry air—I say rather dry because the bulk of our United States population lives in the moister climates of the east and south, the dry plains of the interior which average our rainfall, are not yet peopled—is to increase

nervous activity. Our nervous system is not wholly in our heads. Fibres and termini are thickly interwoven over every square millimetre of our skin. Moisture soothes and quiets them; dryness irritates and excites. This excitement gives an impulse to activity which bears the whole nature before it; urges both mind body on in an impetuous movement. If this movement be rightly directed the result is good. Occasional rest is essential, but the proper rest cannot be found at home. The south or the seashore where the air is soft, where moisture enervates, should be visited.

The physical possibilities of Minnesota can scarcely be estimated. We have computed present possibilities chiefly, and merely hinted toward the future. Calculating that future from the equation of the past, we can obtain a result difficult to comprehend, yet in no way tending to excite alarm. It should spur us on to honorable effort that in coming years this great commonwealth shall be in every way what we in our calmest moments with the greatest confidence foresee and declare.



The Commercial Possibilities of Minnesota.

BY DAVID C. BELL.

I must regret that this branch of the theme which we consider to-night had not fallen to other hands, for I am admonished at the outset that I must undertake to sail between the Scylla of Professor Hall's paper which has just been given, and the Charybdis of Mr. Morley's, which is to follow. There is, however, I perceive, some allowance made for the exercise of the gift of prophecy.

What better foundations for material and commercial prosperity could be laid than were laid by the Creator in the most favorable physical conditions with which he endowed this region; and what higher ends can be set before us as citizens of Minnesota, than the moral uplifting of all the people of our commonwealth?

We come then directly to our topic: "The Commercial Possibilities of Minnesota." We shall find our prime factors in the favorable geographical position that our state occupies, near the center and at the grand watershed of the continent; and in our large territorial extent.

The first is made sufficiently plain by a glance at the map. The second is illustrated by the figures before you. The area of New England is 65,038 square miles; New York, 47,000; Minnesota, 84,287. That is to say, Minnesota is some 80 per cent. larger than the Empire state, and 30 per cent. larger than the six New England states. Not only this, but her 53,943,379 acres are mainly arable, and of abounding fertility; so that, after deducting the 3,608,012 acres, or nearly one sixteenth of the whole, for the large and small inland lakes, we still have

over fifty millions of acres in our domain. The general character of the state's surface is gently undulating prairie land, covered with nutritous natural grasses, with alternating timber belts. A large section of the state is fittingly designated "The Park Region." Ten thousand clear lakes, well distributed over the entire state, furnish, with their numerous outlets, an abundant and never failing supply of the best water.

Fish abound in the lakes, and in the streams are vast hydraulic powers, many of which are easily controlled and developed. Now, when we come to speak of man's development and use of these great natural resources that we have so briefly outlined, it will not be surprising if few of us have given the subject any careful study. Possibly one of our first surprises will be the small beginnings thus far made. A glance at the following diagram



will show you that only 6,500,000 acres—less than one-eighth of our state—has yet been brought under cultivation, and that but imperfectly. This is not, however, a remarkable fact, when we remember that it is but twenty-seven years this present month since Minnesota became one of the United States of America. As states count their history, ours still wears the swaddling clothes of its babyhood; yet I doubt not when the figures are before us, all will admit the vigor and promise of the infant.

As to agricultural products or commerce, Minnesota had none worth the name up to the date of her admission into the Union in 1858. We need not therefore, go back of that date for our commercial statistics. Let us, in the first place, note the growth in the products of the soil. As late as 1859 local dealers in St. Paul and Minneapolis were announcing large consignments of flour and oats from down-river points, which meant from Dubuque, Davenport and Galena.

Think of sending oats to a state that raised over 41,000,000 bushels last year, and of shipping flour to Minneapolis, the output of whose mills for the current week was 142,836 barrels, making it the largest flour manufacturing center on the globe. It is the leading primary wheat market as well, her receipts in 1884 exceeding those of Chicago by more than 2,000,000 bushels. Besides this our single lake port, Duluth, shipped over 11,000,000 bushels of wheat in 1884, giving it rank with the great wheat markets of the country.

Beginning with the year 1860, we shall find the increase in Minnesota's three leading staples as follows:

AGRICULTURAL PRODUCTS.

	WHEAT.	OATS.	CORN.
1860	2,186,993	2,176,002	2,941,952
1870	18,866,073	10,678,261	4,743,117
1880	34,601,030	23,382,158	14,831,741
1884	47,792,662	41,203,742	23,630,000
1884, average yield.	17.18	40.18	85.50

OTHER PRODUCTS (ESTIMATED.)

	AMOUNT.	VALUE.
Early amber cane syrup	1,000,000 gallons.	\$500,000.
Butter and cheese	30,000,000 lbs.	4,000,000
Logs and lumber	691,000,000 ft.	18,000,000
Flour, etc	40,000,000
Total products of dairy, orchard and farm	75,000,000

We shall find another index to our development along these lines, in the property valuation as listed to the assessors for taxation. The official records give us the following figures up to 1884:

PROPERTY VALUATION.

1860, real and personal	\$ 36,743,498
1872, real and personal	108,373,836
1880, real and personal	268,517,736
1884, real and personal	401,028,587
1890, real and personal estimated	600,000,000
1900, real and personal estimated	1,000,000,000

Let us bear in mind the fact that not over one-half the actual value of real estate is given, and probably not over one-quarter to one-third the value of personal property.

We come now to note the advance in population. Here also we find a wonderful gain in the few years since Minnesota began to attract settlers from the older states, and from over the sea. There has been worked out here in a brief period a substantial development and prosperity, that all in all, has scarcely been paralleled in the world's history. Until we learn something of the people themselves that have wrought the miracle, we shall have missed its secret.

Not long since the writer spent a day and night in one of

the newer timbered regions of our state. My host and his family had moved from Wisconsin; their present home a log cabin, the farm but partly cleared. Near the cabin on a fine elevated site was shown the stone foundation for a new house. Piled close at hand was the lumber for the superstructure. In an adjacent shed were the door and window frames, made at odd times by this farmer and his handy sons; and spread out on my host's knees not many hours after my arrival, were the ground plans and elevations of this prospective house, with its piazzas, bay windows, bath-room and modern improvements. In a few months the log cabin will in the natural course be exchanged for this really fine house. This is a sample of the thrift and enterprise of the people that make up our population. They get on in the world.

For a suggestive contrast to all this, go with me down into New Mexico, where there is a different race and a diverse civilization. Here you shall find a regulation adobe house, on the sunny or shady side of which, according to season and time of day, basks the shiftless householder, where generations of his ancestors have lounged before him. His commercial and agricultural ventures are limited to occasionally driving to town a sorry burro loaded with an armful of *pinon* wood, or plowing his field with yoked cows and a crooked stick, as in the days of the Ptolemies. He neither knows nor needs hardware merchant, lumber dealer, or agricultural implement man.

Having considered somewhat the quality of our population, let us now regard numbers. We shall find here the same rapid growth that has marked our state's development in other lines:

POPULATION.

1860 (two years after admission).....	172,023
1865.....	250,097
1870.....	439,407
1880.....	780,773
1884 (estimated).....	1,000,000
1890 (estimated).....	1,450,000
1900 (estimated).....	3,000,000

Minnesota presents an interesting field for the study of the race problem. Inasmuch as a consideration of this question must largely affect her commercial future, we may briefly glance at it in this connection. With a purely native American population of scarcely more than 28 per cent., she possesses a distinctly foreign element of about 34 per cent. Of this the Scandinavian races furnish nearly one-half — no other state has so many — while the German population is less than 10 per cent. of the whole, and the Irish scarcely 8 per cent.

Our Scandinavian people make excellent citizens. They are for the most part a moral, temperate, industrious, Sabbath-keeping, home-loving, law-abiding folk. They Americanize readily, and show such thrift and enterprise withal as easily to persuade us that they are the true Yankees of Europe and our very kith and kin.

As this is "Minnesota day," we may be excused for making one or two suggestive comparisons with our neighbor on the southwest, Kansas. In the matter of insurance, there was carried in 1872 in this state fire risks amounting to \$48,718,176, which in 1883 had increased to \$188,063,006. The same year the fire risks carried in Kansas amounted to only \$85,811,151 — over \$100,000,000 less; while in life insurance premiums she paid \$114,169, as against Minnesota \$521,691 — or scarcely one quarter as much. But these are incidental rather than important.

RAILWAYS.

Let us now briefly consider the subject of railways and transportation. The 300 to 400 miles of natural water ways which Minnesota possesses may be deemed a sort of reserve. Railways have proved the great factors in developing and promoting our commerce. Of these not a rail was laid in the state as late as 1861, and only ten miles were built in 1862. The Red river cart and dog train were at that time the only commercial ties that connected us with the vast British possessions lying along our northern border, to which we are now so

closely linked with iron bonds. What is the present showing?

At the close of 1884 there were in operation in Minnesota, 4,125 miles of railroad, built at a reported cost of \$181,370,722, with reported annual gross earnings amounting to \$23,508,089, and paying into the state treasury a yearly tax of \$613,865. It may now be asserted that no portion of the state south of our great trans-continental line, the Northern Pacific railway, and west of the Mississippi river, is twenty-five miles distant from a railroad.

MINNESOTA AT THE WORLD'S FAIR.

Minnesota's part in the world's exposition at New Orleans has been highly creditable. While the results minister to our honest and warrantable state pride, let them also furnish our citizens some useful practical hints.

Among the notable premiums awarded to Minnesota products were two each for sugars and syrups—early amber—eight for grapes, two for horses, forty-one for poultry, and twenty-one for butter and cheese. Perhaps more significant than all the rest was the sweepstakes premium for butter. This doubtless points to a future development in the line of dairying, that will in time dwarf all the farming interests in our state, and bring great and permanent prosperity to our people. Already Minnesota contains 1,500,000 head of stock, valued at \$51,000,-000; but the dairying capabilities of the state are scarcely touched. Governor Hubbard in his late message to the state legislature, refers to this growing industry as follows: "In the older portions of our state, where our agricultural industry has demonstrated the adaptability of our soil and climate to the employment of the most advanced methods of husbandry, there has rapidly developed in recent years large interests in stock raising, and extensive establishments for the manufacture of dairy products, from which the farmer realizes handsomely from his investment and labor." He adds: "As a result, these are eminently prosperous and accumulating wealth." That

we might have this matter, which seems to be so related to our commercial future, brought before us in the most intelligent manner, I have lately communicated some inquiries to our able state dairy commissioner, Mr. W. C. Rice; and from his reply make the following extracts: "In regard to the matter referred by you; there is such a thing as the dairy belt. It is limited to a section 150 miles wide extending across the country between latitude 42 and 45 degrees north. Within this limit the climate possesses the qualities which cause cream to ripen to perfection. It also yields the grain and grasses best calculated to produce milk rich in the constituent elements of butter and cheese. Then in addition to climatic influences there are local causes which exert a marked influence upon the perfection of dairy products. Wherever in this belt there is a limestone or granite soil, with hard water, there the tame grasses flourish best, and a peculiar aroma and solidity characterize the dairy products of such sections. Minnesota possesses in a remarkable degree every one of these essential elements for success in dairying. They may be summarized as follows:

- First The unusual healthfulness of animals.
- Second A soil known as a blue grass soil.
- Third Clear, hard water.
- Fourth A clear dry atmosphere, without sultriness or fogs.
- Fifth A location which commands markets east and west.

The dairy interests of Minnesota have grown from nothing in 1880 to 30,000,000 pounds of creamery butter in 1884. (The first creamery built in the state was in 1880.) A corresponding increase has been made in dairy butter and cheese.

The possibilities of Minnesota in this direction are practically unlimited. The state can keep 2,000,000 cows and make 400,000,000 pounds of butter in a year, and only use one acre in four of her arable lands. But of course mixed farming is what our state needs, and a proper proportion of dairying makes a very large possible resource to the state."

I have attempted to group together and present to you in this condensed form some of the leading factors in the material development of our great commonwealth, and to point out some good signs of her future commercial possibilities.

Perhaps the most suggestive showing as well as best epitome, will be the summary of the business statistics of Minnesota's two great cities.

MINNEAPOLIS AND ST. PAUL.

Statistics of 1884.	Aggregate.
Population	200,000
Banking capital	\$12,369,717
Buildings erected during the year	4,848
At a cost of	\$15,431,377
Real estate sales for the year	29,076,359
Jobbing sales	126,418,650
Manufactures (Minneapolis)	60,347,000

I need scarcely say that our reliance in this paper has been on facts and figures, rather than on any setting of words.

I recall, however, a prophecy concerning Minnesota, spoken by William H. Seward, in September, 1860, from the steps of our state capitol. At the time these words were uttered they seemed to us who listened, little more than the compliment of the hour; but they now read so like the inspired words of a seer, that I venture to quote them in closing:

"Here is the central place where the agriculture of the richest regions of North America must begin its magnificent supplies to the whole world. On the east, along the shores of Lake Superior, and on the west, stretching in one broad plain, in a belt across the continent, is a country where state after state is yet to rise, and whence the productions for the support of human society in other crowded states must forever go forth. This is then a commanding field; but it is as commanding in regard to the commercial future, for power is not to reside permanently on the eastern slope of the Alleghany mountains, nor in the seaports of the Pacific. Seaports have always been controlled at last by the people of the inland and

of the upland. Those who inhabit the sources of the mighty waters are they who supply all states with the materials of wealth and power. The seaports will be the mouths by which we shall communicate and correspond with Europe, but the power that shall speak and shall communicate and express the will of men on this continent is to be located in the Mississippi valley, and at the sources of the Mississippi and the St. Lawrence. In other days, studying what might, perhaps, have seemed to others a visionary subject, I have cast about for the future, the ultimate central seat of power of the North American people. I have looked at Quebec, and at New Orleans, at Washington and at San Francisco, at Cincinnati and at St. Louis, and it has been the result of my best conjecture that the seat of power for North America would yet be found in the valley of Mexico; that the glories of the Aztec capital would be renewed and that city would become ultimately the capital of the United States of America. But I have corrected that view, and I now believe that the last seat of power on the great continent will be found somewhere within a radius not far from the very spot where I stand, at the head of navigation on the Mississippi river, and on the great Mediterranean lakes."

Had it been permitted to this great statesman to revisit our state now, a quarter of a century after these words were spoken, he should have seen indubitable proofs of the certain fulfilment of this glowing prophecy.



The Religious Possibilities of Minnesota.

BY REV. JOHN H. MORLEY, ST. PAUL.

The material and the spiritual are closely connected. The body influences the spirit, and in turn is influenced by it. So the material interests of the state are connected with the spiritual. As a strong body gives the spirit larger capacities, so the material prosperity of the state is a help to its spiritual growth. The vigorous body may rule the spirit, and the material prosperity of the community may dwarf its spiritual growth. But material prosperity is an aid to spiritual prosperity. Here lies one of the religious possibilities of Minnesota. We have the conditions which will result in a rich, prosperous community. Minnesota wheat and flour are celebrated the world over. Our lumber has brought riches to many of our number who are using it for the Master. The growing of cattle, yet in its infancy, is destined to bring wealth to those portions of the state where wheat is raised only with a small profit. Consider, then, that we are favorably situated to secure cheap transportation, the water aiding us in keeping down freight; reflect that we are at the initial point of those great lines which lead out to the west and northwest, and that these sections are tributary to our twin cities, if we have the shrewdness to make them so; remember, too, that our population is of that hardy, energetic type, commonly found in this belt of latitude, and that it is destined to be increased through the large unoccupied portions of the state until this commonwealth is the home of millions; reflect that our people have shown thrift, adaptability to new or to hard conditions, so that when wheat shows signs of failure they have turned to live stock and have retrieved themselves;

that in our southwest corner they have been undaunted by repeated visitations of grasshoppers in past years; that our merchants are showing power to control the wholesale trade of the northwest, and we see that here are the conditions of a rich, populous state.

If these energies be turned into religious channels we shall have a noble exhibition of religion. If the habit of Christian benevolence be established, we shall soon make our colleges independent of eastern aid, and our churches self-supporting. There is in the near future the power to make Carleton and Hamline and Macalester, by the aid of Minnesota money alone, as rich as Yale or Princeton. It needs but a few years of prosperity to make our churches independent of the home missionary aid by which so many of them have been nurtured. It needs but a few years more to make the churches of this state the great treasury of Christian benevolence from which the golden streams shall go out to the ends of the earth, as they have come to us from many eastern states in the past. That this is not a remote possibility is seen from the fact that, in one Christian denomination, Minnesota led in gifts to home missions, and that the church whose gifts to benevolence last year and the year before are the largest, as reported in our year book, is in this city. To some extent our people appreciate their responsibility to give as the Lord prospers them, and there is here not only the possibility, but the moral certainty, of a better giving to missions than we have ever seen.

But, again, let us notice that the character of our population, and its attitude with regard to morality, education and religion, prefigures indefinite religious possibilities. The trend of thought upon morals and religion is in the right direction. Take the question of temperance, which is closely connected with our religious welfare. We may not have gone so far as

some of our sister commonwealths. We may, considering the heterogeneous character of our people, be building more wisely than if we builded more rapidly. For that law is wise, not which is ideally the best, but which best meets the needs, the prejudices, the various complications existing in the people for whom it is framed. Now the direction of public sentiment on the temperance question is right; our laws will become more stringent; our people are becoming better informed as to the effects of liquor drinking and the necessity of restricting the traffic. In various communities high license has been carried. In some of them it will remain. The state will carry it ere long. All this is the more encouraging because the large foreign element in our population which has been educated to look at the temperance question differently from us, might have prevented the advance already made.

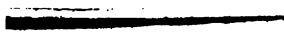
Education is the handmaid of religion. An uneducated people, a people educated out of sympathy with Christianity, are not susceptible to high religious progress. Our system of education is Christian. The temper of our people demands that religion, so far as it is the basis of morality, shall be taught in our public schools, so that our education is Christian, and the majority of the teachers in our common schools are either Christians, or have Christian spirit. In the Christian spirit which is in, and gathers about our state university, which pervades our three normal schools, in the warm religious atmosphere which pervades our Carleton and our Hamline, we are reminded of large possibilities of religious influence permeating our lower schools, affecting our whole population in those nameless ways by which consecrated mind impresses its surroundings. As the small number of our colleges gives promise of adequate support for them all, so the temper already seen in them promises not only high scholarship, but the production of religious character.



Notice now that quality of our population which makes it hospitable to the Christian church and its institutions. When a new town is started it expects the church. It always has a nucleus about which the Sabbath-school and the church can be formed. This is true even in the case of a town started by those avowedly hostile to Christianity. They would have the church. In any new town the money comes easily to build the first church, and when it is needed the second and third, and sometimes when not needed. Our population is naturally Christian to this extent that it craves the prayers, the preaching and the sweet songs of the church.

As a feature of our character which indicates our religious future, I may add that our religion is intensely practical. For instance we have not in our preaching discussed questions of theology so much as questions of evangelism. Our temper has not been one of debate over possibility of a second or continued probation for any members of our human race. It has demanded rather, the immediate appliance of the gospel to save sinners now. We have not engaged largely in discussions in the higher theology; but we have founded churches; we have converted men; we have pushed the kingdom of Christ. This temper of our churches and ministers is one of the most hopeful signs of large religious growth. They who present Christ to human hearts will save them. Those old words come to us as a melting anthem, "I, if I be lifted up from the earth, will draw all men unto me."

We should be humble enough also to recognize that one element in our foreign population not only does not hinder, but helps on religious character. We have the largest Scandinavian population of any state in the union. The Scandinavians are law-abiding, industrious, moral, religious. They are more easily educated to right views upon temperance than the Irish or Ger-



mans. They are in full sympathy with our free institutions. They take kindly to education. They are Protestant. All these characteristics make them, as some believe, the best possible class of settlers.

Their religious character is destined to affect ours favorably. The Scandinavians are now passing through that great politico-religious experience through which all our Protestant churches passed centuries ago. Emancipation from state religion, the going back to the simpler forms of truth, the taking the last appeal to the Scriptures: all these things we have passed through. They are passing through them now. Hence they assimilate with us religiously as well as politically. In many respects they will, if we come into closer sympathy with them, influence us favorably. Their piety is simple and unaffected; their reverence for the Bible is profound. "What does the Bible say?" is their ultimate appeal in matters of religious faith. The movement by which the free church has just been formed began in an appeal to the Bible. This movement, which takes us back to the inception of our own free churches, is one of the most striking manifestations of divine power.

The coming in contact with a people thus alive to the leadings of God's providences cannot but invigorate our piety. From the influence communicated to us from them we shall receive great benefit. It goes without saying that the benefits will be reciprocal. We can assist the mission churches in their poverty with our wealth, we can aid them to an educated ministry, of which they are now destitute, in many nameless ways in which a delicate Christian instinct will discover, we can aid them. But I should not dare say which party would receive the larger benefit. A thoughtful observer of the religious outlook will be thankful that we are to be reinforced by Scandinavian faith and piety. It is believed that in the religious char-

acter of its immigrants Minnesota is especially favored. Scandinavians come to Minnesota as their home, and we have the largest population of any of the states.

If now, we consider how all these conditions of progress are accelerated by the probable increase in our population, we gain some idea of our possible religious development. We are thinly settled even in the most populous parts of the state, while large areas are practically uninhabited. Let Minnesota receive as many inhabitants to the square mile as Massachusetts has, and our population will be about 20,000,000. Let it equal that of England and Wales, and it will exceed 30,000,000. Three millions of people for Minnesota in 1900, would not be an over estimate. That our population is, in the next century, to be immense, that it will partake of the same general character as the present, having its thrift, its predilection in favor of temperance, education, religion, admits of no doubt. Many of our older states have, in certain respects at least, reached the limit of their possibilities; they must work upon the people already there, increased slowly by natural law, increased to some extent by immigration of an undesirable kind, and drained by the emigration of its best element to the west. Our possibilities are all before. The flush of youth is upon us. Our strength is undeveloped.

Perhaps I may be allowed to specify two or three points of danger. First, there is danger that the temperance question be neglected; that it be decided upon pecuniary rather than moral considerations, or, that it be decided without the aid of the sober minded, thoughtful, prudent portion of the people, whose judgment must be invoked, before a permanent statute which is to be enforced, can be passed. There is a tendency to push the temperance question to the front, but the tendency is ephemeral. A community is roused to-day and torpid to-morrow. Many things conspire to push the temperance question into the background. Then there is a tendency to elevate pecuniary considerations above the moral. The fact that high license will bring

larger revenues to the city and state is not conclusive proof that high license is wise. Yet this argument is pushed to the exclusion of other considerations. The pecuniary considerations are slight. High license may be the thing for which we should aim, considering the present state of public opinion and the varying prejudices of our mixed population, but the question is to be decided by other than pecuniary considerations.

So we are exposed to the danger of relegating the question to the temperance reformers so-called. I have only respect for them, but the question cannot be settled by them. When it is settled to stay, it must be settled by the great body of law-abiding men and women who have property, who pay taxes, who have no pet theories, but who will decide the question upon its merits. It is obvious that a great work of education is to be performed before the final settlement. If we place a law upon our statute books adapted to our needs; if we enforce it; if we so educate public sentiment in our state, now in its infancy, that its future millions shall respect and practice temperance, we need to bestir ourselves.

There is danger, too, that the education of the young shall not be religious. As I have indicated the tendency of education here is religious. Religion, as the basis of morality, can be taught in our schools. Our system is in sympathy with religion. I know the delicacy of any attempt to make our schools more Christian. But we may improve the opportunity, allowed us by law, to teach religion as the foundation of morality farther than is yet done. We may throw the power of personal influence with teachers in favor of the many indescribable methods by which a teacher can win his pupils to morality and to the church. We may see, as far as is possible, that men in sympathy with Christian faith are chosen as teachers. It is for the public good, not simply for the good of the church, that our teachers be religious men. They will the better teach morality, thrift, and all those economic virtues which aid the state.

All this is supplementary to the main work of the church.

We are to aim directly at the religious training of the young. Every school supported by the state must be hampered in its religious teaching. There is only a limited range in which it can teach religious duties. We make no criticism upon state schools because of this limitation. We only emphasize the duty of the church to do what the state cannot do. In the line of the religious training of the young in the Sabbath-school; in the supporting of the church with its institutions in communities where the population is foreign, irreligious; in the full equipment of our colleges, are wrapped up the possibilities of the state.

There is peril, too, that our religious development shall be dwarfed by our material development. In a region where the material possibilities are so gigantic, where the success already achieved faintly foreshadows that which the hurrying future will bring us, we must be spiritually alert if we meet the emergency. To many a man, the planting of a little church far out upon the frontier and the in moulding of the community after the divine model, seems a small thing compared with the spanning of a continent by a railway. The opening of a mission in one of the degraded parts of the city, and the converting men to Christ, and the building them into Christian manhood, these seem insignificant compared with the building of stone and granite blocks and the filling them with the products of the trade of a continent. We may feel that this material development, all this glory of bud and blossom, promises more for the welfare of society than does the gospel. We need to keep our personal faith in Christ intact, to maintain our confidence that the mightiest forces now operating to save society are in the gospel, and that from the cross there go out through all the world those lines of light and love which will surely dispel the darkness, and make the earth blossom with love as old Eden blossomed with flowers. If we hold ourselves responsible for the building here of a Christian state, we may, by God's grace, achieve our possibilities.

